

Rec'd PCT/PTG 29 JUN 2004

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 July 2003 (24.07.2003)

PCT

(10) International Publication Number
WO 2003/060947 A3

(51) International Patent Classification⁷: **H01J 61/073**,
61/34, 61/36

[DE/DE]; c/o Philips Intellectual Property & Standards
GmbH, Weisshausstr. 2, 52066 Aachen (DE).

(21) International Application Number:
PCT/IB2002/005290

(74) Agent: **VOLMER, Georg**; Philips Intellectual Property &
Standards GmbH, Weisshausstr. 2, 52066 Aachen (DE).

(22) International Filing Date:
12 December 2002 (12.12.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
102 00 009.3 2 January 2002 (02.01.2002) DE

(71) Applicant (for DE only): **PHILIPS INTELLECTUAL
PROPERTY & STANDARDS GMBH** [DE/DE]; Stein-
damm 94, 20099 Hamburg (DE).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (for all designated States except DE, US):
KONINKLIJKE PHILIPS ELECTRONICS N.V.
[NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven
(NL).

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK,
TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

(72) Inventor; and

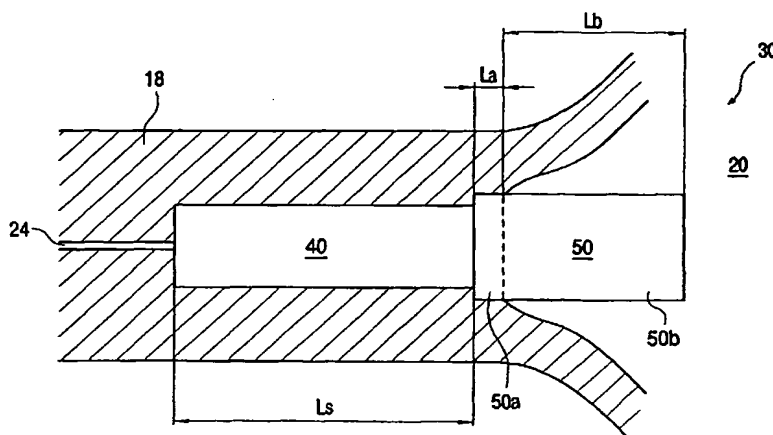
(75) Inventor/Applicant (for US only): **HAACKE, Michael**

Published:

— with international search report

[Continued on next page]

(54) Title: DISCHARGE LAMP



(57) Abstract: A discharge lamp (10) is disclosed with a closed discharge vessel (20) which is surrounded by a wall of transparent material. Two electrodes (30) are present, partly embedded in the wall and projecting into the interior of the discharge vessel (20). At least one, but preferably both electrodes (13) are elongate in shape and comprise a head part (50) and a shaft part (40), which are distinguished by different diameters and/or different materials. Tungsten is preferred for the head part (50) and a tungsten-rhenium alloy for the shaft part (40). The shaft part (40) is enclosed in the wall material, usually quartz, whereas of the head part (50) only a first, short portion (50a) is in contact with the wall, while its second, longer portion (50b) projects into the interior of the discharge vessel (20). Favorable diameters for the head part (50) were found to be 350 to 450 μm , and for the shaft part (40) 150 to 400 μm . A long lamp life is achieved with the electrode design according to the invention, in particular in thermally strongly loaded discharge lamps as preferred for automotive applications. There are additional advantages in a lesser crystallization of the discharge vessel (20), less burning-off of the electrodes (30), and an improved run-up behavior.

WO 2003/060947 A3